

Annex 4C. Wastewater Treatment and Discharge (IPCC 4D)
to the Technical Support Document for California's 2000-2014 Greenhouse Gas
Emission Inventory

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Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

IPCC category = 4D1 — Wastewater Treatment and Discharge - Domestic Wastewater Treatment and Discharge

► Sector = Wastewater Treatment : Domestic Wastewater : Anaerobic Digesters >

Activity = Biogas production

- Variable Name -	- Year -	- Value and Units -	- Reference -
Biogas production	2000	8,530,325,506 cf	Calculation, see text
Biogas production	2001	8,521,809,374 cf	Calculation, see text
Biogas production	2002	8,513,766,360 cf	Calculation, see text
Biogas production	2003	8,505,723,347 cf	Calculation, see text
Biogas production	2004	8,497,207,215 cf	Calculation, see text
Biogas production	2005	8,573,379,284 cf	Calculation, see text
Biogas production	2006	8,579,056,705 cf	Calculation, see text
Biogas production	2007	8,584,734,126 cf	Calculation, see text
Biogas production	2008	8,589,938,429 cf	Calculation, see text
Biogas production	2009	8,595,615,851 cf	Calculation, see text
Biogas production	2010	8,601,293,272 cf	Calculation, see text
Biogas production	2011	8,606,497,575 cf	Calculation, see text
Biogas production	2012	8,612,174,996 cf	Calculation, see text
Biogas production	2013	8,617,852,417 cf	Calculation, see text
Biogas production	2014	8,623,265,852 cf	Calculation, see text
Digester gas production rate	2000	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2001	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2002	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2003	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2004	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2005	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2006	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2007	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2008	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2009	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2010	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2011	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2012	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2013	1 cf / person / day	USEPA, 2015b
Digester gas production rate	2014	1 cf / person / day	USEPA, 2015b
Methane destruction efficiency	2000	0.99	USEPA, 2015b
Methane destruction efficiency	2001	0.99	USEPA, 2015b
Methane destruction efficiency	2002	0.99	USEPA, 2015b
Methane destruction efficiency	2003	0.99	USEPA, 2015b
Methane destruction efficiency	2004	0.99	USEPA, 2015b
Methane destruction efficiency	2005	0.99	USEPA, 2015b
Methane destruction efficiency	2006	0.99	USEPA, 2015b
Methane destruction efficiency	2007	0.99	USEPA, 2015b
Methane destruction efficiency	2008	0.99	USEPA, 2015b
Methane destruction efficiency	2009	0.99	USEPA, 2015b
Methane destruction efficiency	2010	0.99	USEPA, 2015b
Methane destruction efficiency	2011	0.99	USEPA, 2015b
Methane destruction efficiency	2012	0.99	USEPA, 2015b
Methane destruction efficiency	2013	0.99	USEPA, 2015b
Methane destruction efficiency	2014	0.99	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Per capita wastewater flow	2000	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2001	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2002	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2003	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2004	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2005	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2006	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2007	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2008	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2009	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2010	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2011	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2012	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2013	100 gal / person / day	USEPA, 2015b
Per capita wastewater flow	2014	100 gal / person / day	USEPA, 2015b
Proportion of CH4 in biogas	2000	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2001	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2002	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2003	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2004	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2005	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2006	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2007	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2008	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2009	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2010	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2011	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2012	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2013	0.65	USEPA, 2015b
Proportion of CH4 in biogas	2014	0.65	USEPA, 2015b
Wastewater flow to plants with anaerobic digesters	2000	2,335,523,797 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2001	2,333,192,160 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2002	2,330,990,057 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2003	2,328,787,955 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2004	2,326,456,317 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2005	2,347,311,521 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2006	2,348,865,947 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2007	2,350,420,372 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2008	2,351,845,262 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2009	2,353,399,687 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2010	2,354,954,112 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2011	2,356,379,002 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2012	2,357,933,427 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2013	2,359,487,852 gal / day	TSD Wastewater
Wastewater flow to plants with anaerobic digesters	2014	2,360,970,000 gal / day	TSD Wastewater

► Sector = Wastewater Treatment : Domestic Wastewater : Centralized Aerobic >

Activity = California population

- Variable Name -	- Year -	- Value and Units -	- Reference -
California population	2000	34,000,835 person	CDOF, 2016
California population	2001	34,512,742 person	CDOF, 2016
California population	2002	34,938,290 person	CDOF, 2016
California population	2003	35,388,928 person	CDOF, 2016
California population	2004	35,752,765 person	CDOF, 2016
California population	2005	35,985,582 person	CDOF, 2016

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

California population	2006	36,246,822 person	CDOF, 2016
California population	2007	36,552,529 person	CDOF, 2016
California population	2008	36,856,222 person	CDOF, 2016
California population	2009	37,077,204 person	CDOF, 2016
California population	2010	37,336,011 person	CDOF, 2016
California population	2011	37,701,901 person	CDOF, 2016
California population	2012	38,062,780 person	CDOF, 2016
California population	2013	38,431,393 person	CDOF, 2016
California population	2014	38,802,500 person	CDOF, 2016
Maximum methane production capacity	2000	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.6 g / g	USEPA, 2015b
Methane correction for aerobic not well managed	2000	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2001	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2002	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2003	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2004	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2005	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2006	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2007	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2008	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2009	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2010	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2011	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2012	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2013	0.3	USEPA, 2015b
Methane correction for aerobic not well managed	2014	0.3	USEPA, 2015b
Per capita biological organic demand (BOD5)	2000	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2001	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2002	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2003	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2004	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2005	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2006	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2007	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2008	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2009	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2010	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2011	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2012	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2013	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2014	90 g / person / day	USEPA, 2015b
Proportion aerobic	2000	0.941	USEPA, various years

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion aerobic	2001	0.943	USEPA, various years
Proportion aerobic	2002	0.945	USEPA, various years
Proportion aerobic	2003	0.947	USEPA, various years
Proportion aerobic	2004	0.949	USEPA, various years
Proportion aerobic	2005	0.95	USEPA, various years
Proportion aerobic	2006	0.952	USEPA, various years
Proportion aerobic	2007	0.953	USEPA, various years
Proportion aerobic	2008	0.955	USEPA, various years
Proportion aerobic	2009	0.957	USEPA, various years
Proportion aerobic	2010	0.958	USEPA, various years
Proportion aerobic	2011	0.96	USEPA, various years
Proportion aerobic	2012	0.962	USEPA, various years
Proportion aerobic	2013	0.963	USEPA, various years
Proportion aerobic	2014	0.965	Extrapolated generic
Proportion aerobic with primary treatment	2000	0.757	USEPA, various years
Proportion aerobic with primary treatment	2001	0.767	USEPA, various years
Proportion aerobic with primary treatment	2002	0.778	USEPA, various years
Proportion aerobic with primary treatment	2003	0.788	USEPA, various years
Proportion aerobic with primary treatment	2004	0.798	USEPA, various years
Proportion aerobic with primary treatment	2005	0.761	USEPA, various years
Proportion aerobic with primary treatment	2006	0.759	USEPA, various years
Proportion aerobic with primary treatment	2007	0.757	USEPA, various years
Proportion aerobic with primary treatment	2008	0.755	USEPA, various years
Proportion aerobic with primary treatment	2009	0.752	USEPA, various years
Proportion aerobic with primary treatment	2010	0.75	USEPA, various years
Proportion aerobic with primary treatment	2011	0.748	USEPA, various years
Proportion aerobic with primary treatment	2012	0.746	USEPA, various years
Proportion aerobic with primary treatment	2013	0.744	USEPA, various years
Proportion aerobic with primary treatment	2014	0.742	USEPA, various years
Proportion aerobic without primary treatment	2000	0.243	USEPA, various years
Proportion aerobic without primary treatment	2001	0.233	USEPA, various years
Proportion aerobic without primary treatment	2002	0.223	USEPA, various years
Proportion aerobic without primary treatment	2003	0.212	USEPA, various years
Proportion aerobic without primary treatment	2004	0.202	USEPA, various years
Proportion aerobic without primary treatment	2005	0.236	USEPA, various years
Proportion aerobic without primary treatment	2006	0.237	USEPA, various years
Proportion aerobic without primary treatment	2007	0.238	USEPA, various years
Proportion aerobic without primary treatment	2008	0.239	USEPA, various years
Proportion aerobic without primary treatment	2009	0.241	USEPA, various years
Proportion aerobic without primary treatment	2010	0.242	USEPA, various years
Proportion aerobic without primary treatment	2011	0.243	USEPA, various years
Proportion aerobic without primary treatment	2012	0.245	USEPA, various years
Proportion aerobic without primary treatment	2013	0.246	USEPA, various years
Proportion aerobic without primary treatment	2014	0.247	Extrapolated generic
Proportion centrally treated	2000	0.9	CWTRC, 2003
Proportion centrally treated	2001	0.9	CWTRC, 2003
Proportion centrally treated	2002	0.9	CWTRC, 2003
Proportion centrally treated	2003	0.9	CWTRC, 2003
Proportion centrally treated	2004	0.9	CWTRC, 2003
Proportion centrally treated	2005	0.9	CWTRC, 2003
Proportion centrally treated	2006	0.9	CWTRC, 2003
Proportion centrally treated	2007	0.9	CWTRC, 2003
Proportion centrally treated	2008	0.9	CWTRC, 2003
Proportion centrally treated	2009	0.9	CWTRC, 2003
Proportion centrally treated	2010	0.9	CWTRC, 2003
Proportion centrally treated	2011	0.9	CWTRC, 2003

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion centrally treated	2012	0.9	CWTRC, 2003
Proportion centrally treated	2013	0.9	CWTRC, 2003
Proportion centrally treated	2014	0.9	CWTRC, 2003
Proportion of BOD removed in primary treatment	2000	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2001	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2002	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2003	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2004	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2005	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2006	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2007	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2008	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2009	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2010	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2011	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2012	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2013	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2014	0.325	USEPA, 2015b
Proportion of operations not well managed	2000	0	USEPA, 2015b
Proportion of operations not well managed	2001	0	USEPA, 2015b
Proportion of operations not well managed	2002	0	USEPA, 2015b
Proportion of operations not well managed	2003	0	USEPA, 2015b
Proportion of operations not well managed	2004	0	USEPA, 2015b
Proportion of operations not well managed	2005	0	USEPA, 2015b
Proportion of operations not well managed	2006	0	USEPA, 2015b
Proportion of operations not well managed	2007	0	USEPA, 2015b
Proportion of operations not well managed	2008	0	USEPA, 2015b
Proportion of operations not well managed	2009	0	USEPA, 2015b
Proportion of operations not well managed	2010	0	USEPA, 2015b
Proportion of operations not well managed	2011	0	USEPA, 2015b
Proportion of operations not well managed	2012	0	USEPA, 2015b
Proportion of operations not well managed	2013	0	USEPA, 2015b
Proportion of operations not well managed	2014	0	USEPA, 2015b

► Sector = Wastewater Treatment : Domestic Wastewater : Centralized Anaerobic >

Activity = California population

- Variable Name -	- Year -	- Value and Units -	- Reference -
California population	2000	34,000,835 person	CDOF, 2016
California population	2001	34,512,742 person	CDOF, 2016
California population	2002	34,938,290 person	CDOF, 2016
California population	2003	35,388,928 person	CDOF, 2016
California population	2004	35,752,765 person	CDOF, 2016
California population	2005	35,985,582 person	CDOF, 2016
California population	2006	36,246,822 person	CDOF, 2016
California population	2007	36,552,529 person	CDOF, 2016
California population	2008	36,856,222 person	CDOF, 2016
California population	2009	37,077,204 person	CDOF, 2016
California population	2010	37,336,011 person	CDOF, 2016
California population	2011	37,701,901 person	CDOF, 2016
California population	2012	38,062,780 person	CDOF, 2016
California population	2013	38,431,393 person	CDOF, 2016
California population	2014	38,802,500 person	CDOF, 2016
Maximum methane production capacity	2000	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.6 g / g	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Maximum methane production capacity	2003	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.6 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.6 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Per capita biological organic demand (BOD5)	2000	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2001	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2002	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2003	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2004	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2005	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2006	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2007	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2008	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2009	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2010	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2011	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2012	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2013	90 g / person / day	USEPA, 2015b
Per capita biological organic demand (BOD5)	2014	90 g / person / day	USEPA, 2015b
Proportion anaerobic	2000	0.059	USEPA, various years
Proportion anaerobic	2001	0.057	USEPA, various years
Proportion anaerobic	2002	0.055	USEPA, various years
Proportion anaerobic	2003	0.053	USEPA, various years
Proportion anaerobic	2004	0.051	USEPA, various years
Proportion anaerobic	2005	0.05	USEPA, various years
Proportion anaerobic	2006	0.048	USEPA, various years
Proportion anaerobic	2007	0.047	USEPA, various years
Proportion anaerobic	2008	0.045	USEPA, various years
Proportion anaerobic	2009	0.043	USEPA, various years
Proportion anaerobic	2010	0.042	USEPA, various years
Proportion anaerobic	2011	0.04	USEPA, various years
Proportion anaerobic	2012	0.038	USEPA, various years
Proportion anaerobic	2013	0.037	USEPA, various years

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion anaerobic	2014	0.035	Extrapolated generic
Proportion anaerobic with primary treatment	2000	0.598	USEPA, various years
Proportion anaerobic with primary treatment	2001	0.61	USEPA, various years
Proportion anaerobic with primary treatment	2002	0.623	USEPA, various years
Proportion anaerobic with primary treatment	2003	0.635	USEPA, various years
Proportion anaerobic with primary treatment	2004	0.647	USEPA, various years
Proportion anaerobic with primary treatment	2005	0.626	USEPA, various years
Proportion anaerobic with primary treatment	2006	0.627	USEPA, various years
Proportion anaerobic with primary treatment	2007	0.627	USEPA, various years
Proportion anaerobic with primary treatment	2008	0.628	USEPA, various years
Proportion anaerobic with primary treatment	2009	0.628	USEPA, various years
Proportion anaerobic with primary treatment	2010	0.629	USEPA, various years
Proportion anaerobic with primary treatment	2011	0.629	USEPA, various years
Proportion anaerobic with primary treatment	2012	0.63	USEPA, various years
Proportion anaerobic with primary treatment	2013	0.63	USEPA, various years
Proportion anaerobic with primary treatment	2014	0.631	USEPA, various years
Proportion anaerobic without primary treatment	2000	0.402	USEPA, various years
Proportion anaerobic without primary treatment	2001	0.39	USEPA, various years
Proportion anaerobic without primary treatment	2002	0.378	USEPA, various years
Proportion anaerobic without primary treatment	2003	0.365	USEPA, various years
Proportion anaerobic without primary treatment	2004	0.353	USEPA, various years
Proportion anaerobic without primary treatment	2005	0.374	USEPA, various years
Proportion anaerobic without primary treatment	2006	0.373	USEPA, various years
Proportion anaerobic without primary treatment	2007	0.373	USEPA, various years
Proportion anaerobic without primary treatment	2008	0.372	USEPA, various years
Proportion anaerobic without primary treatment	2009	0.372	USEPA, various years
Proportion anaerobic without primary treatment	2010	0.371	USEPA, various years
Proportion anaerobic without primary treatment	2011	0.371	USEPA, various years
Proportion anaerobic without primary treatment	2012	0.37	USEPA, various years
Proportion anaerobic without primary treatment	2013	0.37	USEPA, various years
Proportion anaerobic without primary treatment	2014	0.369	Extrapolated generic
Proportion centrally treated	2000	0.9	CWTRC, 2003
Proportion centrally treated	2001	0.9	CWTRC, 2003
Proportion centrally treated	2002	0.9	CWTRC, 2003
Proportion centrally treated	2003	0.9	CWTRC, 2003
Proportion centrally treated	2004	0.9	CWTRC, 2003
Proportion centrally treated	2005	0.9	CWTRC, 2003
Proportion centrally treated	2006	0.9	CWTRC, 2003
Proportion centrally treated	2007	0.9	CWTRC, 2003
Proportion centrally treated	2008	0.9	CWTRC, 2003
Proportion centrally treated	2009	0.9	CWTRC, 2003
Proportion centrally treated	2010	0.9	CWTRC, 2003
Proportion centrally treated	2011	0.9	CWTRC, 2003
Proportion centrally treated	2012	0.9	CWTRC, 2003
Proportion centrally treated	2013	0.9	CWTRC, 2003
Proportion centrally treated	2014	0.9	CWTRC, 2003
Proportion of BOD removed in primary treatment	2000	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2001	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2002	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2003	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2004	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2005	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2006	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2007	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2008	0.325	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion of BOD removed in primary treatment	2009	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2010	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2011	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2012	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2013	0.325	USEPA, 2015b
Proportion of BOD removed in primary treatment	2014	0.325	USEPA, 2015b

► Sector = Wastewater Treatment : Domestic Wastewater : Effluent Emissions >

Activity = California population

- Variable Name -	- Year -	- Value and Units -	- Reference -
California population	2000	34,000,835 person	CDOF, 2016
California population	2001	34,512,742 person	CDOF, 2016
California population	2002	34,938,290 person	CDOF, 2016
California population	2003	35,388,928 person	CDOF, 2016
California population	2004	35,752,765 person	CDOF, 2016
California population	2005	35,985,582 person	CDOF, 2016
California population	2006	36,246,822 person	CDOF, 2016
California population	2007	36,552,529 person	CDOF, 2016
California population	2008	36,856,222 person	CDOF, 2016
California population	2009	37,077,204 person	CDOF, 2016
California population	2010	37,336,011 person	CDOF, 2016
California population	2011	37,701,901 person	CDOF, 2016
California population	2012	38,062,780 person	CDOF, 2016
California population	2013	38,431,393 person	CDOF, 2016
California population	2014	38,802,500 person	CDOF, 2016
CA population served by biological denitrification	2000	313,302 Person	TSD Wastewater
CA population served by biological denitrification	2001	314,887 Person	TSD Wastewater
CA population served by biological denitrification	2002	303,679 Person	TSD Wastewater
CA population served by biological denitrification	2003	304,963 Person	TSD Wastewater
CA population served by biological denitrification	2004	293,050 Person	TSD Wastewater
CA population served by biological denitrification	2005	328,784 Person	TSD Wastewater
CA population served by biological denitrification	2006	340,141 Person	TSD Wastewater
CA population served by biological denitrification	2007	339,763 Person	TSD Wastewater
CA population served by biological denitrification	2008	351,480 Person	TSD Wastewater
CA population served by biological denitrification	2009	350,502 Person	TSD Wastewater
CA population served by biological denitrification	2010	361,845 Person	TSD Wastewater
CA population served by biological denitrification	2011	361,731 Person	TSD Wastewater
CA population served by biological denitrification	2012	361,495 Person	TSD Wastewater
CA population served by biological denitrification	2013	375,968 Person	TSD Wastewater
CA population served by biological denitrification	2014	379,025 Person	Extrapolated generic
Effluent water emission factor	2000	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2001	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2002	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2003	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2004	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2005	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2006	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2007	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2008	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2009	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2010	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2011	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2012	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2013	5.000E-03 g / g	USEPA, 2015b
Effluent water emission factor	2014	5.000E-03 g / g	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Fraction of nitrogen in protein	2000	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2001	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2002	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2003	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2004	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2005	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2006	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2007	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2008	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2009	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2010	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2011	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2012	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2013	0.16 g / g	USEPA, 2015b
Fraction of nitrogen in protein	2014	0.16 g / g	USEPA, 2015b
Industrial and commercial codischarge factor	2000	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2001	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2002	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2003	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2004	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2005	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2006	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2007	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2008	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2009	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2010	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2011	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2012	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2013	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2014	1.25	USEPA, 2015b
Non-consumption protein factor	2000	1.4	USEPA, 2015b
Non-consumption protein factor	2001	1.4	USEPA, 2015b
Non-consumption protein factor	2002	1.4	USEPA, 2015b
Non-consumption protein factor	2003	1.4	USEPA, 2015b
Non-consumption protein factor	2004	1.4	USEPA, 2015b
Non-consumption protein factor	2005	1.4	USEPA, 2015b
Non-consumption protein factor	2006	1.4	USEPA, 2015b
Non-consumption protein factor	2007	1.4	USEPA, 2015b
Non-consumption protein factor	2008	1.4	USEPA, 2015b
Non-consumption protein factor	2009	1.4	USEPA, 2015b
Non-consumption protein factor	2010	1.4	USEPA, 2015b
Non-consumption protein factor	2011	1.4	USEPA, 2015b
Non-consumption protein factor	2012	1.4	USEPA, 2015b
Non-consumption protein factor	2013	1.4	USEPA, 2015b
Non-consumption protein factor	2014	1.4	USEPA, 2015b
Protein consumption rate	2000	31,300 g / person / year	USEPA, 2015b
Protein consumption rate	2001	30,700 g / person / year	USEPA, 2015b
Protein consumption rate	2002	31,000 g / person / year	USEPA, 2015b
Protein consumption rate	2003	31,000 g / person / year	USEPA, 2015b
Protein consumption rate	2004	31,300 g / person / year	USEPA, 2015b
Protein consumption rate	2005	30,700 g / person / year	USEPA, 2015b
Protein consumption rate	2006	31,300 g / person / year	USEPA, 2015b
Protein consumption rate	2007	31,400 g / person / year	USEPA, 2015b
Protein consumption rate	2008	31,400 g / person / year	USEPA, 2015b
Protein consumption rate	2009	31,500 g / person / year	USEPA, 2015b
Protein consumption rate	2010	31,600 g / person / year	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Protein consumption rate	2011	31,700 g / person / year	USEPA, 2015b
Protein consumption rate	2012	31,800 g / person / year	USEPA, 2015b
Protein consumption rate	2013	31,900 g / person / year	USEPA, 2015b
Protein consumption rate	2014	31,968 g / person / year	Extrapolated generic
Sewage sludge N not entering aquatic environment	2000	26.21 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2001	26.39 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2002	26.56 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2003	26.74 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2004	26.91 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2005	27.58 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2006	27.87 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2007	28.17 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2008	28.46 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2009	28.97 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2010	29.28 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2011	29.61 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2012	29.94 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2013	30.26 Gg (thousand tonnes)	TSD Wastewater
Sewage sludge N not entering aquatic environment	2014	30.43 Gg (thousand tonnes)	TSD Wastewater

► Sector = Wastewater Treatment : Domestic Wastewater : Plant Emissions >

Activity = California population

- Variable Name -	- Year -	- Value and Units -	- Reference -
California population	2000	34,000,835 person	CDOF, 2016
California population	2001	34,512,742 person	CDOF, 2016
California population	2002	34,938,290 person	CDOF, 2016
California population	2003	35,388,928 person	CDOF, 2016
California population	2004	35,752,765 person	CDOF, 2016
California population	2005	35,985,582 person	CDOF, 2016
California population	2006	36,246,822 person	CDOF, 2016
California population	2007	36,552,529 person	CDOF, 2016
California population	2008	36,856,222 person	CDOF, 2016
California population	2009	37,077,204 person	CDOF, 2016
California population	2010	37,336,011 person	CDOF, 2016
California population	2011	37,701,901 person	CDOF, 2016
California population	2012	38,062,780 person	CDOF, 2016
California population	2013	38,431,393 person	CDOF, 2016
California population	2014	38,802,500 person	CDOF, 2016
CA population served by biological denitrification	2000	313,302 Person	TSD Wastewater
CA population served by biological denitrification	2001	314,887 Person	TSD Wastewater
CA population served by biological denitrification	2002	303,679 Person	TSD Wastewater
CA population served by biological denitrification	2003	304,963 Person	TSD Wastewater
CA population served by biological denitrification	2004	293,050 Person	TSD Wastewater
CA population served by biological denitrification	2005	328,784 Person	TSD Wastewater
CA population served by biological denitrification	2006	340,141 Person	TSD Wastewater
CA population served by biological denitrification	2007	339,763 Person	TSD Wastewater
CA population served by biological denitrification	2008	351,480 Person	TSD Wastewater
CA population served by biological denitrification	2009	350,502 Person	TSD Wastewater
CA population served by biological denitrification	2010	361,845 Person	TSD Wastewater
CA population served by biological denitrification	2011	361,731 Person	TSD Wastewater
CA population served by biological denitrification	2012	361,495 Person	TSD Wastewater
CA population served by biological denitrification	2013	375,968 Person	TSD Wastewater
CA population served by biological denitrification	2014	379,025 Person	Extrapolated generic
Emission factor w/o nitrification denitrification	2000	3.2 g / person	USEPA, 2015b
Emission factor w/o nitrification denitrification	2001	3.2 g / person	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Industrial and commercial codischarge factor	2013	1.25	USEPA, 2015b
Industrial and commercial codischarge factor	2014	1.25	USEPA, 2015b

► Sector = Wastewater Treatment : Domestic Wastewater : Septic Systems >

Activity = California population

- Variable Name -	- Year -	- Value and Units -	- Reference -
California population	2000	34,000,835 person	CDOF, 2016
California population	2001	34,512,742 person	CDOF, 2016
California population	2002	34,938,290 person	CDOF, 2016
California population	2003	35,388,928 person	CDOF, 2016
California population	2004	35,752,765 person	CDOF, 2016
California population	2005	35,985,582 person	CDOF, 2016
California population	2006	36,246,822 person	CDOF, 2016
California population	2007	36,552,529 person	CDOF, 2016
California population	2008	36,856,222 person	CDOF, 2016
California population	2009	37,077,204 person	CDOF, 2016
California population	2010	37,336,011 person	CDOF, 2016
California population	2011	37,701,901 person	CDOF, 2016
California population	2012	38,062,780 person	CDOF, 2016
California population	2013	38,431,393 person	CDOF, 2016
California population	2014	38,802,500 person	CDOF, 2016
Proportion in septic systems	2000	0.1	CWTRC, 2003
Proportion in septic systems	2001	0.1	CWTRC, 2003
Proportion in septic systems	2002	0.1	CWTRC, 2003
Proportion in septic systems	2003	0.1	CWTRC, 2003
Proportion in septic systems	2004	0.1	CWTRC, 2003
Proportion in septic systems	2005	0.1	CWTRC, 2003
Proportion in septic systems	2006	0.1	CWTRC, 2003
Proportion in septic systems	2007	0.1	CWTRC, 2003
Proportion in septic systems	2008	0.1	CWTRC, 2003
Proportion in septic systems	2009	0.1	CWTRC, 2003
Proportion in septic systems	2010	0.1	CWTRC, 2003
Proportion in septic systems	2011	0.1	CWTRC, 2003
Proportion in septic systems	2012	0.1	CWTRC, 2003
Proportion in septic systems	2013	0.1	CWTRC, 2003
Proportion in septic systems	2014	0.1	CWTRC, 2003
Septic Systems CH4 Emissions Factor	2000	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2001	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2002	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2003	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2004	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2005	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2006	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2007	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2008	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2009	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2010	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2011	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2012	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2013	10.7 g / person / day	USEPA, 2015b
Septic Systems CH4 Emissions Factor	2014	10.7 g / person / day	USEPA, 2015b

IPCC category = 4D2 — Wastewater Treatment and Discharge - Industrial Wastewater Treatment and Discharge

► Sector = Manufacturing : Wastewater Treatment : Fugitives >

Activity = Fugitive emissions

- Variable Name -	- Year -	- Value and Units -	- Reference -
Fugitive emissions	2000	Not used in estimates	None, see text
Fugitive emissions	2001	Not used in estimates	None, see text
Fugitive emissions	2002	Not used in estimates	None, see text
Fugitive emissions	2003	Not used in estimates	None, see text
Fugitive emissions	2004	Not used in estimates	None, see text
Fugitive emissions	2005	Not used in estimates	None, see text
Fugitive emissions	2006	Not used in estimates	None, see text
Fugitive emissions	2007	Not used in estimates	None, see text
Fugitive emissions	2008	Not used in estimates	None, see text
Fugitive emissions	2009	Not used in estimates	None, see text
Fugitive emissions	2010	Not used in estimates	None, see text
Fugitive emissions	2011	Not used in estimates	None, see text
Fugitive emissions	2012	Not used in estimates	None, see text
Fugitive emissions	2013	Not used in estimates	None, see text
Fugitive emissions	2014	Not used in estimates	None, see text

► Sector = Oil & Gas Extraction : Wastewater Treatment : Fugitives >

Activity = Fugitive emissions

- Variable Name -	- Year -	- Value and Units -	- Reference -
Fugitive emissions	2000	Not used in estimates	None, see text
Fugitive emissions	2001	Not used in estimates	None, see text
Fugitive emissions	2002	Not used in estimates	None, see text
Fugitive emissions	2003	Not used in estimates	None, see text
Fugitive emissions	2004	Not used in estimates	None, see text
Fugitive emissions	2005	Not used in estimates	None, see text
Fugitive emissions	2006	Not used in estimates	None, see text
Fugitive emissions	2007	Not used in estimates	None, see text
Fugitive emissions	2008	Not used in estimates	None, see text
Fugitive emissions	2009	Not used in estimates	None, see text
Fugitive emissions	2010	Not used in estimates	None, see text
Fugitive emissions	2011	Not used in estimates	None, see text
Fugitive emissions	2012	Not used in estimates	None, see text
Fugitive emissions	2013	Not used in estimates	None, see text
Fugitive emissions	2014	Not used in estimates	None, see text

► Sector = Petroleum Marketing : Wastewater Treatment : Fugitives >

Activity = Fugitive emissions

- Variable Name -	- Year -	- Value and Units -	- Reference -
Fugitive emissions	2000	Not used in estimates	None, see text
Fugitive emissions	2001	Not used in estimates	None, see text
Fugitive emissions	2002	Not used in estimates	None, see text
Fugitive emissions	2003	Not used in estimates	None, see text
Fugitive emissions	2004	Not used in estimates	None, see text
Fugitive emissions	2005	Not used in estimates	None, see text
Fugitive emissions	2006	Not used in estimates	None, see text
Fugitive emissions	2007	Not used in estimates	None, see text
Fugitive emissions	2008	Not used in estimates	None, see text
Fugitive emissions	2009	Not used in estimates	None, see text
Fugitive emissions	2010	Not used in estimates	None, see text
Fugitive emissions	2011	Not used in estimates	None, see text

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Fugitive emissions	2012	Not used in estimates	None, see text
Fugitive emissions	2013	Not used in estimates	None, see text
Fugitive emissions	2014	Not used in estimates	None, see text

► Sector = Wastewater Treatment : Industrial Wastewater >

Activity = Production processed - Apples

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Apples	2000	258,548 tonne	USDA, 2016
Production processed - Apples	2001	235,868 tonne	USDA, 2016
Production processed - Apples	2002	213,188 tonne	USDA, 2016
Production processed - Apples	2003	204,075 tonne	USDA, 2016
Production processed - Apples	2004	160,993 tonne	USDA, 2016
Production processed - Apples	2005	160,993 tonne	USDA, 2016
Production processed - Apples	2006	160,993 tonne	USDA, 2016
Production processed - Apples	2007	156,489 tonne	USDA, 2016
Production processed - Apples	2008	163,293 tonne	USDA, 2016
Production processed - Apples	2009	120,202 tonne	USDA, 2016
Production processed - Apples	2010	127,006 tonne	USDA, 2016
Production processed - Apples	2011	127,006 tonne	USDA, 2016
Production processed - Apples	2012	122,470 tonne	USDA, 2016
Production processed - Apples	2013	122,470 tonne	USDA, 2016
Production processed - Apples	2014	108,862 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	2.06 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	2.06 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	3,660 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	3,660 l / tonne	USEPA, 2015b

Activity = Production processed - Citrus fruit

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Citrus fruit	2000	3,138,911 tonne	USDA, 2016
Production processed - Citrus fruit	2001	2,902,059 tonne	USDA, 2016
Production processed - Citrus fruit	2002	2,639,374 tonne	USDA, 2016
Production processed - Citrus fruit	2003	3,176,640 tonne	USDA, 2016
Production processed - Citrus fruit	2004	2,569,095 tonne	USDA, 2016
Production processed - Citrus fruit	2005	3,159,765 tonne	USDA, 2016
Production processed - Citrus fruit	2006	3,113,550 tonne	USDA, 2016
Production processed - Citrus fruit	2007	2,469,150 tonne	USDA, 2016
Production processed - Citrus fruit	2008	3,003,984 tonne	USDA, 2016
Production processed - Citrus fruit	2009	2,679,278 tonne	USDA, 2016
Production processed - Citrus fruit	2010	3,153,639 tonne	USDA, 2016

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Production processed - Citrus fruit	2011	3,551,812 tonne	USDA, 2016
Production processed - Citrus fruit	2012	3,384,924 tonne	USDA, 2016
Production processed - Citrus fruit	2013	3,374,040 tonne	USDA, 2016
Production processed - Citrus fruit	2014	3,150,918 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	0.476 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	0.476 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	10,110 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	10,110 l / tonne	USEPA, 2015b

Activity = Production processed - Non-citrus fruit

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Non-citrus fruit	2000	6,935,920 tonne	USDA, 2016
Production processed - Non-citrus fruit	2001	5,939,091 tonne	USDA, 2016
Production processed - Non-citrus fruit	2002	6,399,996 tonne	USDA, 2016
Production processed - Non-citrus fruit	2003	5,913,042 tonne	USDA, 2016
Production processed - Non-citrus fruit	2004	5,674,630 tonne	USDA, 2016
Production processed - Non-citrus fruit	2005	5,907,904 tonne	USDA, 2016
Production processed - Non-citrus fruit	2006	5,315,006 tonne	USDA, 2016
Production processed - Non-citrus fruit	2007	5,599,970 tonne	USDA, 2016
Production processed - Non-citrus fruit	2008	5,995,532 tonne	USDA, 2016
Production processed - Non-citrus fruit	2009	5,622,026 tonne	USDA, 2016
Production processed - Non-citrus fruit	2010	5,962,788 tonne	USDA, 2016
Production processed - Non-citrus fruit	2011	6,062,054 tonne	USDA, 2016
Production processed - Non-citrus fruit	2012	5,699,244 tonne	USDA, 2016
Production processed - Non-citrus fruit	2013	6,088,451 tonne	USDA, 2016
Production processed - Non-citrus fruit	2014	5,477,438 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	1.81 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	1.81 g / l	ARB, 2015a

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Chemical oxygen demand (COD)	2014	1.81 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	12,417 l / tonne	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Wastewater outflow rate	2009	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	12,417 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	12,417 l / tonne	USEPA, 2015b
Activity = Production processed - Other vegetables			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Other vegetables	2000	22,320,409 tonne	USDA, 2016
Production processed - Other vegetables	2001	20,593,470 tonne	USDA, 2016
Production processed - Other vegetables	2002	25,125,178 tonne	USDA, 2016
Production processed - Other vegetables	2003	20,193,088 tonne	USDA, 2016
Production processed - Other vegetables	2004	22,511,835 tonne	USDA, 2016
Production processed - Other vegetables	2005	20,344,338 tonne	USDA, 2016
Production processed - Other vegetables	2006	20,799,408 tonne	USDA, 2016
Production processed - Other vegetables	2007	22,385,885 tonne	USDA, 2016
Production processed - Other vegetables	2008	22,023,102 tonne	USDA, 2016
Production processed - Other vegetables	2009	23,137,868 tonne	USDA, 2016
Production processed - Other vegetables	2010	22,516,849 tonne	USDA, 2016
Production processed - Other vegetables	2011	22,017,025 tonne	USDA, 2016
Production processed - Other vegetables	2012	22,692,071 tonne	USDA, 2016
Production processed - Other vegetables	2013	22,007,282 tonne	USDA, 2016
Production processed - Other vegetables	2014	23,716,502 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	1.22 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	1.22 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	8,857 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	8,857 l / tonne	USEPA, 2015b

Activity = Production processed - Potatoes

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Potatoes	2000	848,868 tonne	USDA, 2016
Production processed - Potatoes	2001	669,950 tonne	USDA, 2016
Production processed - Potatoes	2002	867,105 tonne	USDA, 2016
Production processed - Potatoes	2003	878,586 tonne	USDA, 2016
Production processed - Potatoes	2004	863,397 tonne	USDA, 2016
Production processed - Potatoes	2005	719,582 tonne	USDA, 2016
Production processed - Potatoes	2006	723,392 tonne	USDA, 2016
Production processed - Potatoes	2007	697,027 tonne	USDA, 2016
Production processed - Potatoes	2008	746,963 tonne	USDA, 2016
Production processed - Potatoes	2009	743,915 tonne	USDA, 2016

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Production processed - Potatoes	2010	699,160 tonne	USDA, 2016
Production processed - Potatoes	2011	773,786 tonne	USDA, 2016
Production processed - Potatoes	2012	787,451 tonne	USDA, 2016
Production processed - Potatoes	2013	729,945 tonne	USDA, 2016
Production processed - Potatoes	2014	790,296 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	2.65 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	2.65 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	10,270 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	10,270 l / tonne	USEPA, 2015b

Activity = Production processed - Poultry

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Poultry	2000	627,344 tonne	USDA, 2016
Production processed - Poultry	2001	637,929 tonne	USDA, 2016
Production processed - Poultry	2002	652,040 tonne	USDA, 2016
Production processed - Poultry	2003	653,353 tonne	USDA, 2016
Production processed - Poultry	2004	666,571 tonne	USDA, 2016
Production processed - Poultry	2005	683,466 tonne	USDA, 2016
Production processed - Poultry	2006	682,479 tonne	USDA, 2016
Production processed - Poultry	2007	691,454 tonne	USDA, 2016
Production processed - Poultry	2008	709,637 tonne	USDA, 2016
Production processed - Poultry	2009	675,477 tonne	USDA, 2016
Production processed - Poultry	2010	682,841 tonne	USDA, 2016
Production processed - Poultry	2011	689,353 tonne	USDA, 2016
Production processed - Poultry	2012	700,461 tonne	USDA, 2016
Production processed - Poultry	2013	686,418 tonne	USDA, 2016
Production processed - Poultry	2014	639,283 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	4.52 g / l	ARB, 2015a

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Chemical oxygen demand (COD)	2013	4.52 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	4.52 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.25	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.25	USEPA, 2015b
Wastewater outflow rate	2000	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	12,500 l / tonne	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Wastewater outflow rate	2008	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	12,500 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	12,500 l / tonne	USEPA, 2015b
Activity = Production processed - Pulp and Paper			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Pulp and Paper	2000	1,802,441 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2001	1,739,875 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2002	1,681,811 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2003	1,612,975 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2004	1,521,349 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2005	1,521,349 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2006	1,534,050 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2007	1,675,571 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2008	1,409,765 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2009	1,190,227 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2010	1,190,227 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2011	1,195,670 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2012	1,183,876 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2013	1,182,062 tonne	CPBIS, 2015
Production processed - Pulp and Paper	2014	1,134,888 tonne	CPBIS, 2015
Chemical oxygen demand (COD)	2000	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	0.8 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	0.8 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.105	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.105	USEPA, 2015b
Wastewater outflow rate	2000	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	85,000 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	85,000 l / tonne	USEPA, 2015b

Activity = Production processed - Red meat

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Red meat	2000	483,435 tonne	USDA, 2016
Production processed - Red meat	2001	509,355 tonne	USDA, 2016
Production processed - Red meat	2002	608,850 tonne	USDA, 2016
Production processed - Red meat	2003	642,510 tonne	USDA, 2016
Production processed - Red meat	2004	643,005 tonne	USDA, 2016
Production processed - Red meat	2005	661,095 tonne	USDA, 2016
Production processed - Red meat	2006	723,420 tonne	USDA, 2016
Production processed - Red meat	2007	752,580 tonne	USDA, 2016
Production processed - Red meat	2008	747,990 tonne	USDA, 2016

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Production processed - Red meat	2009	766,710 tonne	USDA, 2016
Production processed - Red meat	2010	775,755 tonne	USDA, 2016
Production processed - Red meat	2011	780,075 tonne	USDA, 2016
Production processed - Red meat	2012	777,150 tonne	USDA, 2016
Production processed - Red meat	2013	779,040 tonne	USDA, 2016
Production processed - Red meat	2014	652,500 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2012	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	8.47 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	8.47 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.33	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Proportion of COD treated anaerobically	2004	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.33	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.33	USEPA, 2015b
Wastewater outflow rate	2000	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2007	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	5,300 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	5,300 l / tonne	USEPA, 2015b

Activity = Production processed - Wine grapes

- Variable Name -	- Year -	- Value and Units -	- Reference -
Production processed - Wine grapes	2000	3,051,769 tonne	USDA, 2016
Production processed - Wine grapes	2001	2,767,821 tonne	USDA, 2016
Production processed - Wine grapes	2002	2,856,725 tonne	USDA, 2016
Production processed - Wine grapes	2003	2,639,001 tonne	USDA, 2016
Production processed - Wine grapes	2004	2,553,726 tonne	USDA, 2016
Production processed - Wine grapes	2005	3,452,746 tonne	USDA, 2016
Production processed - Wine grapes	2006	2,881,220 tonne	USDA, 2016
Production processed - Wine grapes	2007	2,982,824 tonne	USDA, 2016
Production processed - Wine grapes	2008	2,735,163 tonne	USDA, 2016
Production processed - Wine grapes	2009	3,359,306 tonne	USDA, 2016
Production processed - Wine grapes	2010	3,255,887 tonne	USDA, 2016
Production processed - Wine grapes	2011	3,036,348 tonne	USDA, 2016
Production processed - Wine grapes	2012	3,645,069 tonne	USDA, 2016
Production processed - Wine grapes	2013	3,851,000 tonne	USDA, 2016
Production processed - Wine grapes	2014	3,531,671 tonne	USDA, 2016
Chemical oxygen demand (COD)	2000	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2001	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2002	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2003	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2004	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2005	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2006	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2007	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2008	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2009	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2010	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2011	2.75 g / l	ARB, 2015a

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Chemical oxygen demand (COD)	2012	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2013	2.75 g / l	ARB, 2015a
Chemical oxygen demand (COD)	2014	2.75 g / l	ARB, 2015a
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b
Methane correction factor for anaerobic systems	2000	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.8	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.8	USEPA, 2015b
Proportion of COD treated anaerobically	2000	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2001	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2002	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2003	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2004	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2005	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2006	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2007	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2008	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2009	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2010	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2011	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2012	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2013	0.05	USEPA, 2015b
Proportion of COD treated anaerobically	2014	0.05	USEPA, 2015b
Wastewater outflow rate	2000	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2001	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2002	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2003	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2004	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2005	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2006	2,783 l / tonne	USEPA, 2015b

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

Wastewater outflow rate	2007	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2008	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2009	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2010	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2011	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2012	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2013	2,783 l / tonne	USEPA, 2015b
Wastewater outflow rate	2014	2,783 l / tonne	USEPA, 2015b

Activity = Wastewater flow - Petroleum Refining

- Variable Name -	- Year -	- Value and Units -	- Reference -
Wastewater flow - Petroleum Refining	2000	79,164,676 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2001	79,168,916 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2002	81,570,022 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2003	82,210,078 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2004	83,868,180 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2005	85,251,139 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2006	85,054,708 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2007	82,671,888 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2008	84,268,123 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2009	80,446,270 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2010	81,533,918 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2011	81,499,524 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2012	81,955,738 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2013	80,730,012 m3 / year	Compilation, see text
Wastewater flow - Petroleum Refining	2014	84,919,394 m3 / year	Compilation, see text
Chemical oxygen demand (COD)	2000	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2001	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2002	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2003	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2004	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2005	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2006	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2007	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2008	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2009	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2010	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2011	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2012	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2013	450 g / m3	USEPA, 2015b
Chemical oxygen demand (COD)	2014	450 g / m3	USEPA, 2015b
Maximum methane production capacity	2000	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2001	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2002	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2003	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2004	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2005	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2006	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2007	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2008	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2009	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2010	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2011	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2012	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2013	0.25 g / g	USEPA, 2015b
Maximum methane production capacity	2014	0.25 g / g	USEPA, 2015b

Variables Used in the Emissions Estimation Equations*Values last updated on Wednesday, March 30, 2016*

Methane correction factor for anaerobic systems	2000	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2001	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2002	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2003	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2004	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2005	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2006	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2007	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2008	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2009	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2010	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2011	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2012	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2013	0.3	USEPA, 2015b
Methane correction factor for anaerobic systems	2014	0.3	USEPA, 2015b